

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
30 June 2005 (30.06.2005)

PCT

(10) International Publication Number
WO 2005/058982 A1

- (51) International Patent Classification⁷: **C08F 10/02**, 2/00, 4/654, 2/34
- (21) International Application Number: PCT/EP2004/013372
- (22) International Filing Date: 24 November 2004 (24.11.2004)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
03104854.9 19 December 2003 (19.12.2003) EP
60/532,128 22 December 2003 (22.12.2003) US
- (71) Applicant (*for all designated States except US*): **BASELL POLYOLEFINE GMBH** [DE/DE]; Brühler Strasse 60, 50389 Wesseling (DE).
- (72) Inventors; and
- (75) Inventors/Applicants (*for US only*): **BAITA, Pietro** [IT/IT]; Via delle Rose 13, I-45030 S.M. Maddalena, Occhiobello (IT). **COVEZZI, Massimo** [IT/IT]; Via Renata di Francia 40, I-44100 Ferrara (IT). **MEI, Gabriele** [IT/IT]; Viale Cavour 144, I-44100 Ferrara (IT). **MORINI, Giampiero** [IT/IT]; Via Giotto 36, I-35100 Padova (IT). **PATER, Joachim, T., M.** [NL/TT]; Via Vene di Bellocchio 10, I-44100 Ferrara (IT).
- (74) Agent: **GIBERTI, Stefano**; Basell Poliolefine Italia S.p.A., Intellectual Property, P.le G. Donegani, 12, I-44100 Ferrara (IT).
- (81) Designated States (*unless otherwise indicated, for every kind of national protection available*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (*unless otherwise indicated, for every kind of regional protection available*): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).
- Declaration under Rule 4.17:**
— *of inventorship (Rule 4.17(iv)) for US only*
- Published:**
— *with international search report*
— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*
- For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

(54) Title: PROCESS FOR THE (CO)POLYMERIZATION OF ETHYLENE

(57) Abstract: A process for preparing a broad molecular weight polyethylene carried out in the presence of a catalyst system comprising (i) a solid catalyst component comprising Mg, Ti, halogen, and optionally an internal electron donor compound, and (ii) an Al-alkyl cocatalyst said process comprising at least two step of polymerization (a) and (b), in which, - in a first step (a) ethylene is polymerized in the presence of a molecular weight regulator in order to produce a ethylene (co)polymer, and in a further step (b), which is carried out in the presence of an external electron donor compound added to this polymerization step as a fresh reactant, ethylene is copolymerized with an alpha olefin of formula CH₂=CHR, in which R is a C₁-C₂₀ hydrocarbon group, to produce an ethylene copolymer having a molecular weight higher than that of the copolymer produced in step (b).

WO 2005/058982 A1